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Snow Surveyors Climbing to a Snow Course

FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS

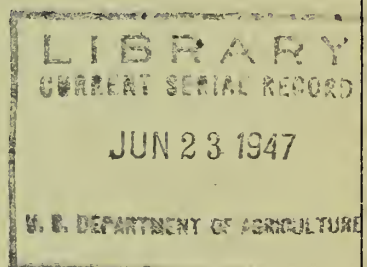
for

ARIZONA

MARCH 15, 1946

By

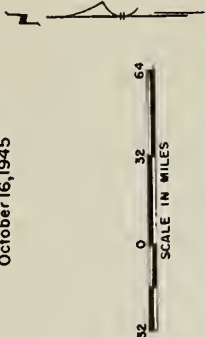
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture



Data included in this report were obtained by the agency named above in cooperation with the Federal, State, and local organizations listed on the last page of this report.

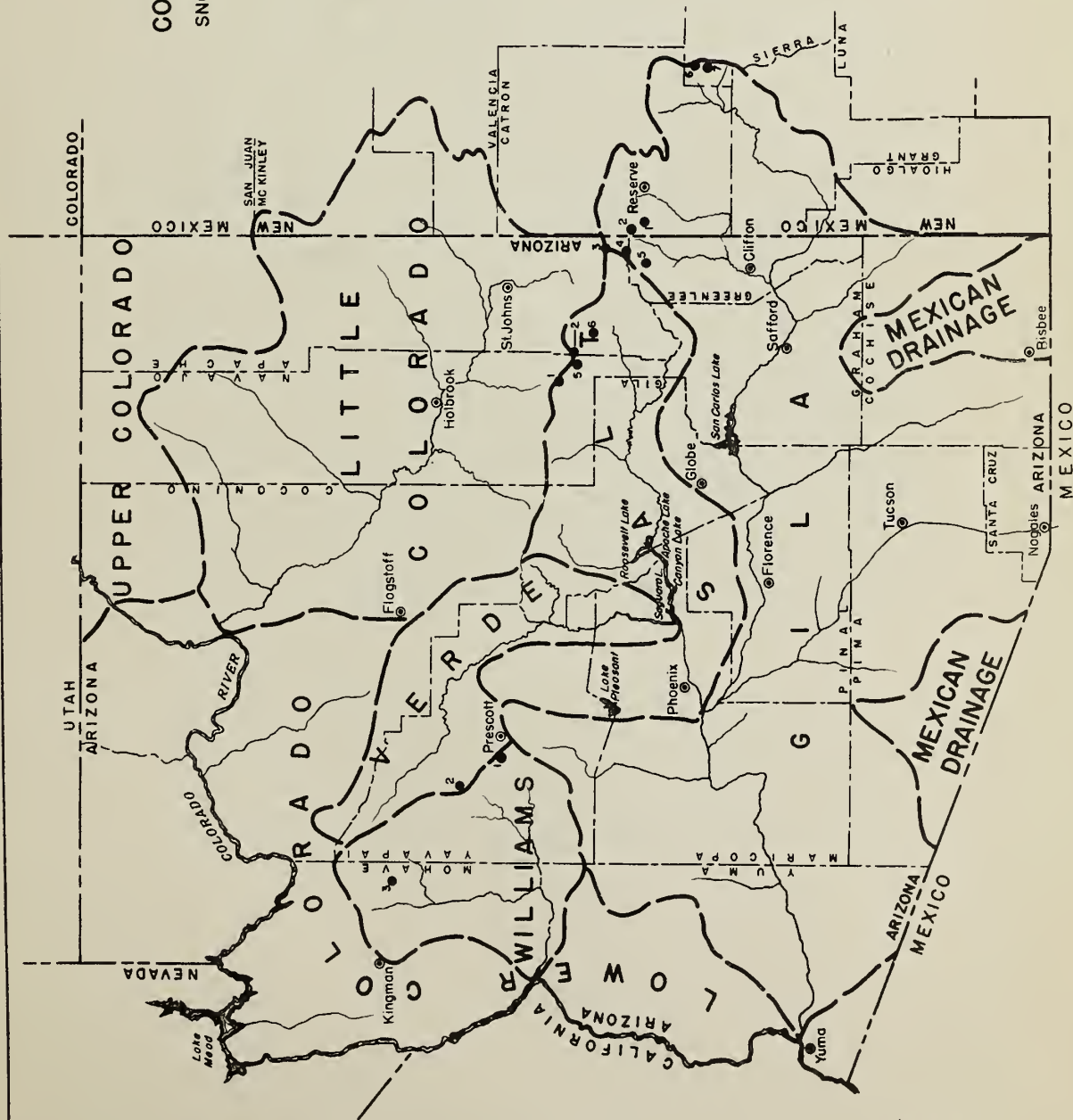
ARIZONA COOPERATIVE SNOW SURVEYS SNOW COURSES AND DRAINAGE BASINS

October 16, 1945



INDEX TO SNOW COURSES

Number	Name	Elevation
Little Colorado River		
1.	Forest Dale	6,000
2.	Matriss	7,200
3.	Matriss	8,500
Williams River		
1.	Iron Springs	6,200
2.	Camp Wood	5,700
3.	Willow Ranch	5,000
Gila River		
1.	(U.S.) Irigoin Divide	8,000
2.	(U.S.) State Line	8,000
3.	Matriss	8,500
4.	Coronado Trail	8,000
5.	Deaver Road	8,000
6.	(U.S.) Taylor Creek	7,850
7.	(U.S.) Human	7,760
Verde River		
1.	Iron Springs	6,200
2.	Camp Wood	5,700
Salt River		
1.	Forest Dale	6,000
2.	January	7,200
3.	Matriss	8,500
4.	Coronado Trail	8,000
5.	Willow Ranch	7,000
6.	Matriss	8,250



WATER SUPPLY OUTLOOK

Arizona
March 15, 1946

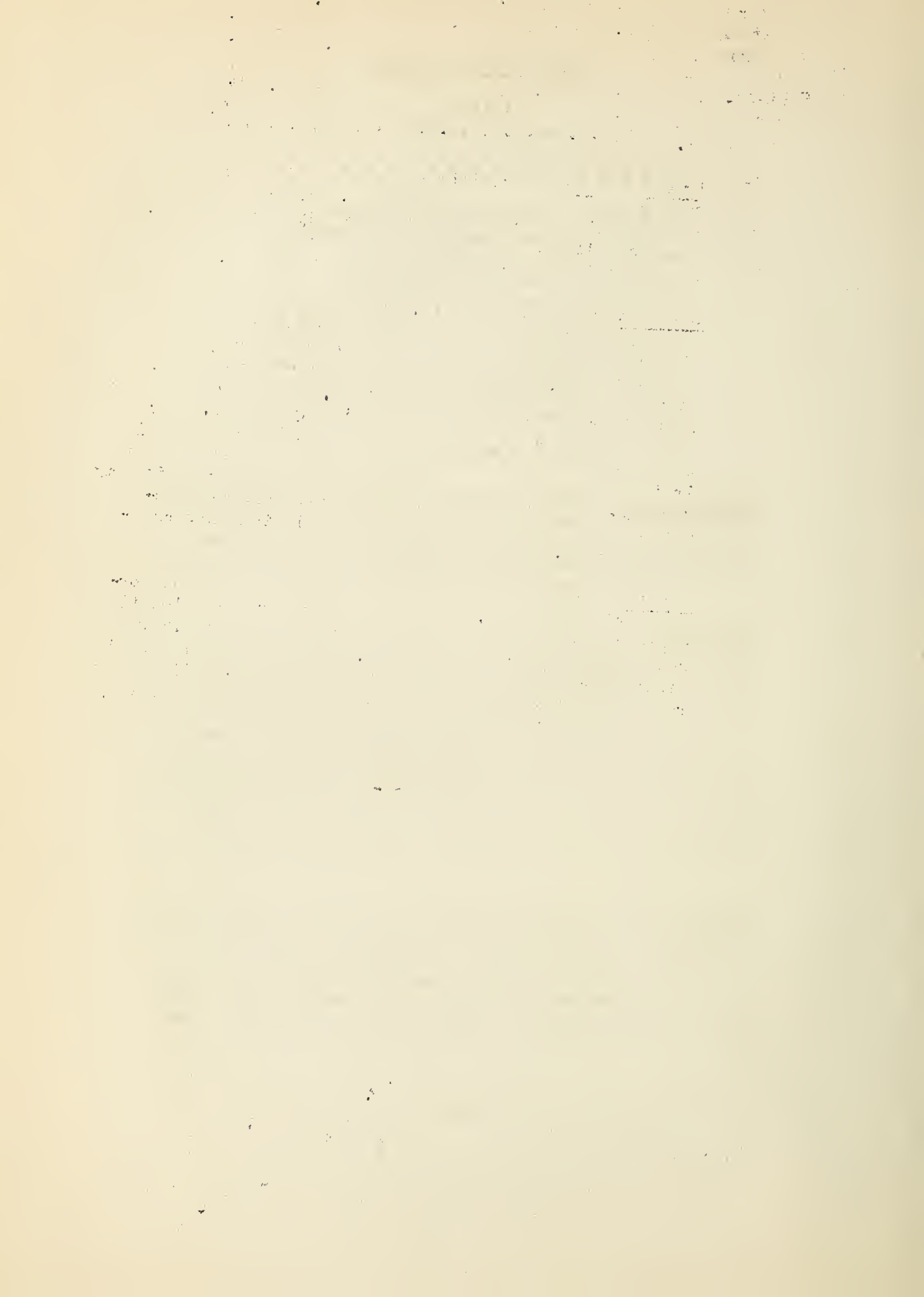
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*
* An acute shortage of irrigation *
* water appears imminent throughout *
* the major irrigated areas of *
* Arizona. Reservoir storage in *
* most instances is at or near an *
* all time low for this date. Run- *
* off from major streams is less *
* than 60 percent of normal. Gen- *
* eral soil moisture conditions in *
* the irrigated valleys are poor. *
*
* * * * *

Precipitation Since February 1 precipitation throughout Arizona has been below normal. In the irrigated valleys this has resulted in extremely dry soil conditions while on the higher elevations it has resulted in a deficient run-off for reservoir storage.

Snow Cover As of March 15, 1946 general snow cover on the major watersheds of the state has equaled or exceeded the all time low for the period of snow survey records. The average of the Gila Watershed courses is very low with most of the snow courses bare, while conditions on Salt River Watershed are only slightly better. Recent snow melt has resulted in good soil moisture conditions on the higher elevations of the Gila and Salt while the irrigated valley soils are either very dry or drying out rapidly. General snow cover and soil moisture conditions on the Little Colorado and Williams Rivers are below normal.

Runoff Stream discharge over the state was below normal during February, with some record breaking low flows approached. Flow of Little Colorado and Salt Rivers was about 40 percent of normal, which was the lowest in eight years for the Salt during this month. Gila River ran about 60 percent of normal while the Verde was only



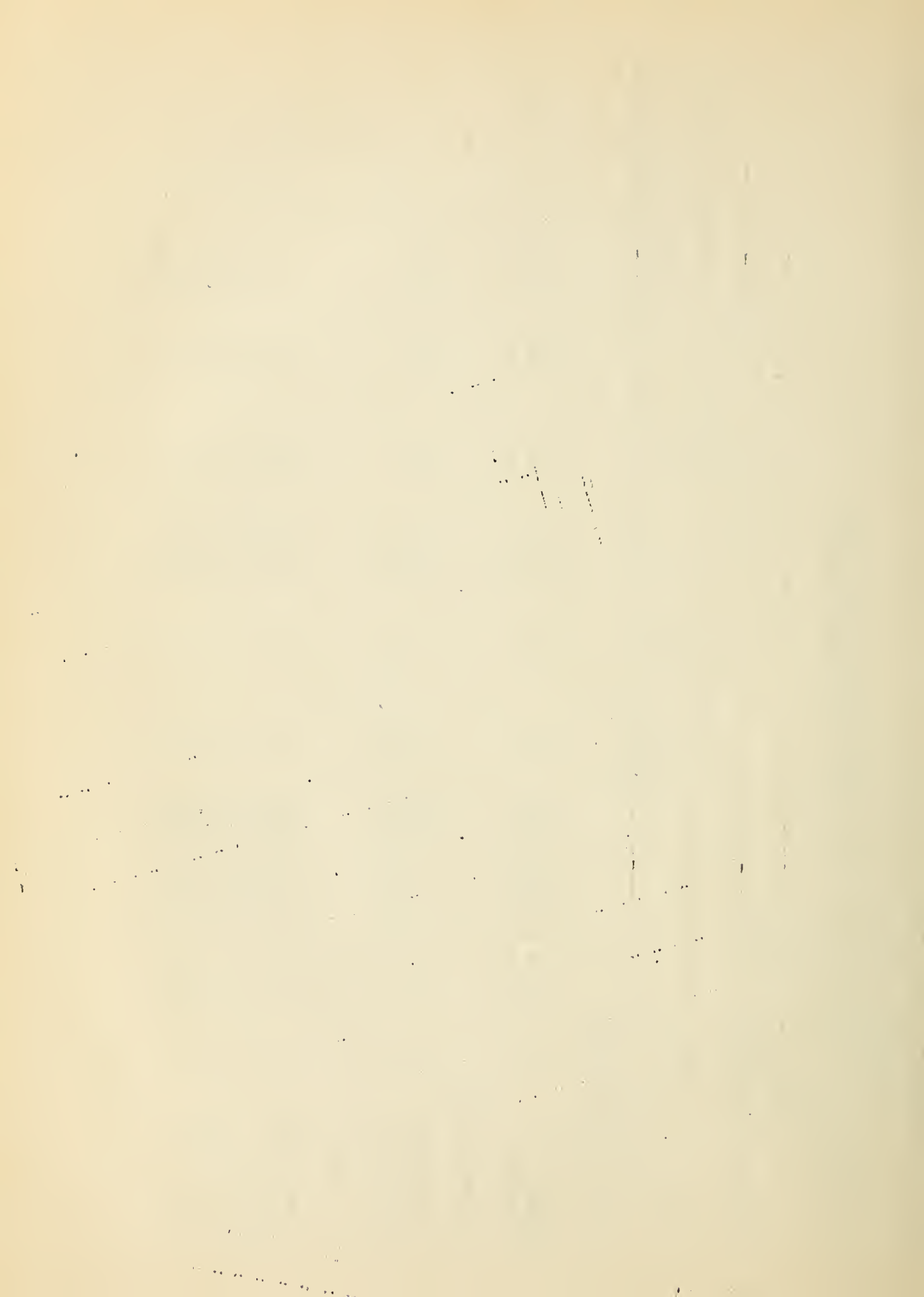
about 30 percent. For this month this was the lowest flow on the Verde since 1904. Williams River continued below normal. In general the maximum flow of Arizona streams occurs during March, but with snow conditions on the higher elevations of the watersheds extremely poor, there is very little possibility of much improvement in stream flow.

Reservoir Storage Present water storage in practically all of the important Arizona reservoirs is nearing a record low for this date. Lake Mead is 98 percent of storage last year and 92 percent of the 1939-45 average while Salt River Reservoirs are 71 percent of last year and 77 percent of the 1931-45 average. San Carlos Reservoir is 27 percent of storage for this date last year and 11 percent of the 1931-45 average with Bartlett only 5 percent of last year and 2 percent of the 1941-45 average. Lake Pleasant is 37 percent of last year and only 8 percent of the 1931-45 average. Lyman Reservoir on Little Colorado is 50 percent greater than last year but about 50 below the 1941-45 average. The new reservoir created by Horseshoe Dam above Bartlett on the Verde has shown a slight loss in storage since February 15.

Valley irrigated soils are very dry, precipitation is below normal, spring snow pack on the higher elevations is deficient, run-off continues below normal, and reservoir storage during the period at which it should be maximum for the year is very low in most instances. This all points to a precarious irrigation agriculture in Arizona for the coming season.

SNOW SURVEYS MARCH 15, 1946

BASIN AND SNOW COURSE					LOCATION		SNOW COVER MEASUREMENTS									
Name	Number	Sec.	Twp.	Rge.	Elev.	March 15, 1946 Snow Depth (inches)	Water Depth (inches)	Actual: Date of Survey	Past March 1945 (inches)	March 15 1944 (inches)	Water Depth Average (inches)	Years of Record	Percent of Average			
LITTLE COLORADO RIVER																
Forest Dale	1	2	9N	21E	6000	0	0	3/15	6.9	0.7	0.3	7	0			
McNary	2	14	8N	23E	7200	1.4	0.6	3/15	2.8	6.0	2.5	7	24			
Nutriosio	3	23	6N	30E	8500	0	0	3/15	1.6	1.8	1.3	7	0			
WILLIAMS RIVER																
Iron Springs	1	22	14N	3W	6200	0	0	3/19	New	Snow	Course	1	:			
Camp Wood	2	3	16N	6W	5700	1.1	0.2	3/15	"	"	"	1	:			
Willow Ranch	3	16	21N	11W	5000	0	0	3/14	"	"	"	1	:			
GILA RIVER																
Frisco Divide	1	31	6S	20N	8000	1.7	0.2	3/15	3.4	2.2	1.5	7	13			
State Line	2	6	6S	21W	8000	0	0	3/15	4.4	2.5	2.2	7	0			
Nutriosio	3	23	6N	30E	8500	0	0	3/15	1.6	1.8	1.3	7	0			
Coronado Trail	4	26	5N	30E	8000	0	0	3/15	4.4	2.0	3.0	7	0			
Beaver Head	5	13	4N	30E	8000	0	0	3/15	4.4	1.1	2.6	7	0			
Taylor Creek	6	20	10S	10W	8500	0	0	3/15	0	0	0.1	5	0			
Inman	7	6	11S	10W	7800	0	0	3/15	New	Snow	Course	1	:			



SNOW SURVEYS MARCH 15, 1946

B/SIN AND SNOW COMP.	LOCATION			SNOW COVER MEASUREMENTS									
				Number	Sec.	Twp.	Rge.	Elev.	March 15, 1946	Actual	Past March 15	Water Depth	1946 as
Name									Snow	Date	1945	Average	Percent
									Depth	of	(Inches)	of	of
									(Inches)	Survey	(Inches)	(Inches)	Record
													Average
VERDE RIVER													
Iron Springs	1	22	14N	3E	6200				0	3/19	New	Course	1
Camp Wood	2	3	16N	6E	5700				1.1	3/15	"	"	
SALT RIVER													
Forest Hole	1	2	9N	21E	6000				0	3/15	0.9	0.3	7
McMurry	2	14	8N	23E	7200				1.4	3/15	2.8	2.5	24
Nutricoso	3	23	6N	30E	8500				0	3/15	1.6	1.3	0
Coronado Trail	4	26	5N	30E	8000				0	3/15	4.4	3.0	0
Milk Hatch	5	28	8N	23E	7000				2.3	2/15	0.4	1.1	45
McKey	6	13	7W	24E	8250				No Report		New	Course	0

STATUS OF RESERVOIR STORAGE AS OF MARCH 15

In the following tabulation water storage in important Arizona reservoirs as of about March 15, 1946 is compared with storage as of approximately the same date in 1945, 1944 and with the designated average.

Storage Reservoirs	Stream Basin	Capacity Acre-Feet	Acre - Feet in Storage about March 15				Years used for average
			1946	1945	1944	Average	
Lake Mead	:Lower Colorado	:31,142,000	:21,263,000	:21,591,000	:22,642,000	:23,171,000	:1939-1945
Salt River Reservoirs	:Salt	:1,770,000	:670,769	:939,512	:1,132,670	:868,595	:1931-1945
San Carlos	:Gila	:1,200,000	:29,440	:110,000	:278,000	:267,533	:1931-1945
Lake Havasu	:Lower Colorado	:688,000	:615,524	:592,300	:595,600	:534,342	:1939-1945
Bartlett	:Verde	:179,500	:1,759	:38,067	:114,785	:109,113	:1941-1945
Lake Pleasant	:Agua Fria	:178,500	:3,510	:9,723	:27,332	:43,538	:1931-1945
Horseshoe	:Verde	:60,000	:9,402				
Lyman	:Little Colorado	:28,500	:4,020	:2,600	:3,540	:8,776	:1941-1945

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LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Forest Dale	Ward T. Kindred
McNary	Ward T. Kindred
Nutrioso	R. L. Diggs
Iron Springs	Ernest Saxby
Camp Wood	Mrs. C. C. Merritt
Willow Ranch	Tiny Miller
Frisco Divide	Dean M. Earl
State Line	Dean M. Earl
Coronado Trail	R.L. Diggs
Beaver Head	Jes Burke
Taylor Creek	F. M. Inman
Inman	F. M. Inman
Milk Ranch	Ward T. Kindred

The following organizations cooperate in the Arizona snow survey work:

STATE

Nevada Agricultural Experiment Station
Reno, Nevada

FEDERAL

Department of Agriculture
Forest Service
 Apache Forest
 Prescott Forest
Soil Conservation Service
Division of Irrigation

Department of Commerce
Weather Bureau
Arizona Section

Department of Interior
Bureau of Reclamation
 Region III
Geological Survey
 Arizona District
Indian Service
 Fort Apache Reservation

Gila Water Commission
Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users Association
Phoenix, Arizona

San Carlos Irrigation and Drainage District
Coolidge, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

